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EUROPEAN PATENT APPLICATION

Application number: **82300486.6**

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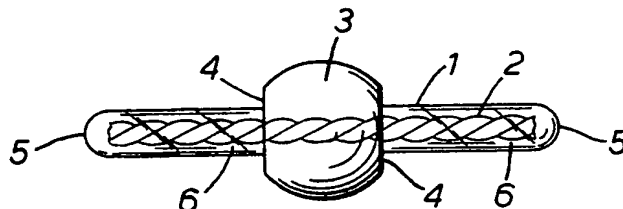
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Designated Contracting States: **CH DE FR GB LI**

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A joint prosthesis.

A small joint spacing prosthesis comprises an elongate silicone rubber body 1 reinforced by a Dacron or nylon string 2 and is made by moulding the body 1 with the string 2 therein. The middle of the body 1 forms a spacer 3 of spherical shape with flat end faces 4 providing for abutment of the bone ends. The remainder of the body 1 forms intramedullary stems 6 with rounded outer ends 5.



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This invention relates to a joint prosthesis, particularly a small joint spacing prosthesis usable in the hands and feet.

According to the present invention, there is
5 provided a joint prosthesis, comprising a spacer for insertion between first and second bones, and first and second intramedullary stems extending from respective opposite ends of said spacer for insertion into the respective bones, the spacer being of greater width than
10 the stems, thereby providing shoulders against which the respective ends of the bones can abut, the arrangement being such that, in the prosthesis when implanted, bending of the joint occurs at the respective end zones of the stems nearer the spacer.

15 In order that the invention may be clearly understood and readily carried into effect, reference will now be made, by way of example, to the accompanying drawing, which shows an elevation of a joint prosthesis.

Referring to the drawing, the prosthesis is a
20 small joint spacing prosthesis which is usable in the hands and feet and would in practice be provided in various sizes. It consists of an elongate silicone rubber body 1 reinforced by a Dacron or nylon string 2, and has been made by moulding the body 1 with the string 2 therein.
25 The middle of the body 1 is of increased diameter to form a spacer 3 which is of spherical shape except that it has flat end faces 4. The remaining parts of the body 1 are of constant diameter except at their rounded ends

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5 and form intramedullary stems 6 projecting centrally from the respective end faces 4.

During implantation the stems 6 are inserted into resectioned adjacent ends of respective bones and
5 the spacer 3 positioned between the resectioned ends abutting against the end faces 4.

The prosthesis can be used in replacements of metacarpo-phalangeal joints, metatarso-phalangeal joints, proximal interphalangeal joints of the fingers,
10 and the carpo-metacarpal joint of the thumb, for example. From a cosmetic viewpoint, in a metacarpo-phalangeal joint, the prosthesis reproduces the knuckle feature. Bending of the joint occurs at the two inner end zones of the stems 6. Because the bone ends abut the definite
15 limits provided by the faces 4, there is no tendency for the stems 6 to penetrate more deeply into the medullae during use of the joint.

CLAIMS:

1. A joint prosthesis, comprising a spacer (3) for insertion between first and second bones, and first and second intramedullary stems (6) extending from respective opposite ends of said spacer (3) for insertion into the respective bones, the spacer (3) being of greater width than the stems (6), thereby providing shoulders (4) against which the respective ends of the bones can abut, the arrangement being such that, in the prosthesis when implanted, bending of the joint occurs at the respective end zones of the stem (6) nearer the spacer (3).
2. A prosthesis according to claim 1, wherein said stems (6) comprise elastomeric material.
3. A prosthesis according to claim 1 or 2, wherein said stems (6) comprise respective flexible reinforcing cores (2).
4. A prosthesis according to claim 3, wherein said cores (2) comprise string.
5. A prosthesis according to claim 2, wherein said spacer (3) and said stems (6) comprise one piece of said elastomeric material.
6. A prosthesis according to claim 5, wherein said spacer (3) and said stems (6) comprise a flexible reinforcing core (2).
7. A prosthesis according to claim 6, wherein said one piece has been moulded with said core (2) therein.
8. A prosthesis according to claim 6 or 7, wherein said core (2) comprises string.
9. A prosthesis according to any preceding claim, wherein said spacer (3) is of spherical shape but with flat end faces (4) from which said stems (6) extend.

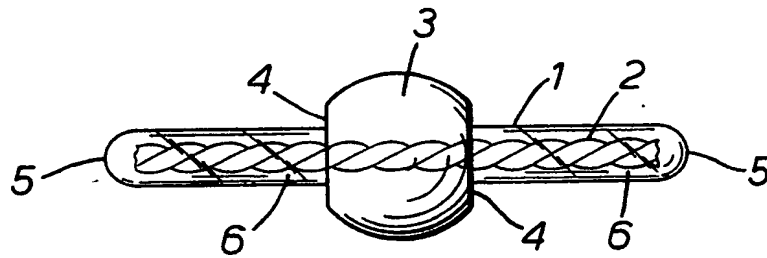
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10. A prosthesis according to any preceding claim,
wherein said stems (6) have their outer ends (5) rounded.

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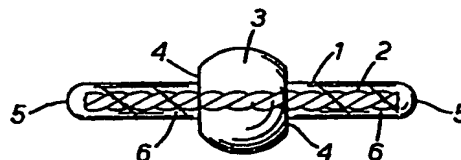
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⑤④ **A joint prosthesis.**

⑤⑦ A small joint spacing prosthesis comprises an elongate silicone rubber body (1) reinforced by a Dacron or nylon string (2) and is made by moulding the body (1) with the string (2) therein. The middle of the body (1) forms a spacer (3) of spherical shape with flat end faces (4) providing shoulders for abutment of the bone ends. The remainder of the body (1) forms intramedullary stems (6) with rounded outer ends (5).





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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	<u>DE - C - 1 960 087</u> (CUTTER LABORATORIES INC.) * claims 1, 3; column 2, lines 29 to 50 * & <u>US - A - 3 593 342</u> --	1-3, 5-7,10	A 61 F 1/03
X	<u>US - A - 3 462 765</u> (SWANSON) * complete document * --	1-5,10	TECHNICAL FIELDS SEARCHED (Int.Cl.3)
X	<u>DE - A1 - 3 021 443</u> (BRISTOL-MYERS CO.) * claim 1; fig. 2 * --	1,2,5, 10	
X	<u>GB - A - 1 320 956</u> (ST. PETER'S RESEARCH LTD.) * claim 1; fig. 1 * --	1,2,5,9	A 61 F 1/00
A	<u>DE - B2 - 2 444 668</u> (CUTTER LABORATORIES INC.) * claim 1; column 10, lines 8 to 26 * & <u>GB - A - 1 479 693</u> -----	1,6,7	
			CATEGORY OF CITED DOCUMENTS
			X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons
<input checked="" type="checkbox"/> The present search report has been drawn up for all claims			&: member of the same patent family, corresponding document
Place of search Berlin		Date of completion of the search 17-05-1982	Examiner KANAL